The Science of the Total Environment, 80 (1989) 298
Elsevier Science Publishers B.V., Amsterdam — Printed in The Netherlands

Author Index

Akinaga, N. 161
Antonovsky, M. 1

Benedetti, J.-L. 103
Borrego, C.S. 279
Brouwer, F.M. 1

Christopherson, N. 195
Couillard, D. 113
Crête, M. 103

Ellis, J.B. 267

Fergusson, D.M. 229
Fergusson, J.E. 229

Gagnon, J. 103
Grenier, Y. 113

Horwood, L.J. 229
Hughes, S. 185

Ikeda, M. 175

Kinzett, N.G. 229
Kumar, N. 293

Lefebvre, M.A. 103

Manolopoulou, M. 225
Marcomini, A. 139
Martins, J.G. 279
Mizutani, T. 161
Morrison, G.M. 267
Munn, R.E. 1
Musgrove, T. 205

Nakatsuka, H. 175
Nath, K. 293
Nault, R. 103
Neal, C. 195, 205, 213
Nicolaou, G. 167
Nunes, T.V. 279

Papastefanou, C. 225
Parr, R.M. 167
Pavoni, B. 139
Pietra, R. 167
Pio, C.A. 279

Rayno, D.R. 243
Revitt, D.M. 267
Reynolds, B. 185

Sabbioni, E. 167
Sfriso, A. 139
Shaw, R.W. 1
Stigliani, W.M. 1

Takatera, H. 161

Walsh, P. 103
Watanabe, T. 175
Weber, J.-P. 103
Whitehead, P.G. 205

Zitko, V. 127

The Science of the Total Environment, 80 (1989) 298
Elsevier Science Publishers B.V., Amsterdam — Printed in The Netherlands

Author Index

Akinaga, N. 161
Antonovsky, M. 1

Benedetti, J.-L. 103
Borrego, C.S. 279
Brouwer, F.M. 1

Christopherson, N. 195
Couillard, D. 113
Crête, M. 103

Ellis, J.B. 267

Fergusson, D.M. 229
Fergusson, J.E. 229

Gagnon, J. 103
Grenier, Y. 113

Horwood, L.J. 229
Hughes, S. 185

Ikeda, M. 175

Kinzett, N.G. 229
Kumar, N. 293

Lefebvre, M.A. 103

Manolopoulou, M. 225
Marcomini, A. 139
Martins, J.G. 279
Mizutani, T. 161
Morrison, G.M. 267
Munn, R.E. 1
Musgrove, T. 205

Nakatsuka, H. 175
Nath, K. 293
Nault, R. 103
Neal, C. 195, 205, 213
Nicolaou, G. 167
Nunes, T.V. 279

Papastefanou, C. 225
Parr, R.M. 167
Pavoni, B. 139
Pietra, R. 167
Pio, C.A. 279

Rayno, D.R. 243
Revitt, D.M. 267
Reynolds, B. 185

Sabbioni, E. 167
Sfriso, A. 139
Shaw, R.W. 1
Stigliani, W.M. 1

Takatera, H. 161

Walsh, P. 103
Watanabe, T. 175
Weber, J.-P. 103
Whitehead, P.G. 205

Zitko, V. 127

The Science of the Total Environment, 80 (1989) 299
Elsevier Science Publishers B.V., Amsterdam — Printed in The Netherlands

Subject Index

Aluminium, increased concentrations in streams draining conifer plantations 185
—, mobilization in acidified streamwaters 195
Atmospheric pollution, source of particles 279

Box plots, representation of elemental composition data 167

Cadmium content of rice 175
Cadmium, variation in caribou tissues 103
Chlorinated dibenzodioxins, composition characterized by degree of chlorination 127
Chlorinated dibenzofurans, composition characterized by degree of chlorination 127
Conifer plantations, increased aluminium in drainage water 185

Dentine lead. determination of and association with intelligence, school performance and behaviour 229

Fluorine, variations in stream and soil waters 213
Future environments for Europe 1

Inorganic aluminium, predicting long-term variations for acidic and acid sensitive catchments 205
—, relationship with hydrogen ion concentration in acidified streams 195

Lead content of rice 175

Metals, temporal variation of metal species in the outflow from a gullypot catchment 267

Nickel, toxicity to freshwater fish 293
Nutrient balance, in the central Venice Lagoon 139

Primary production, in the central Venice Lagoon 139

Radioactivity of coloured rain 225

Sewage sludge, effect on N, P, K, Ca, Mg and trace element contents of plant tissues 113
Stream and lake acidification, modification to the one-box version of the MAGIC model 205

Thorium isotopes, uptake by and distribution in plants 243
Trace elements data, box plot representation 167

Urinary nitrate, association with urinary tract infections 161

The Science of the Total Environment, 80 (1989) 300–301
Elsevier Science Publishers B.V., Amsterdam — Printed in The Netherlands

Contents

VOLUME 80 (1989)

(Abstracted/Indexed in: Biol. Abstr., Chem. Abstr., Curr. Contents AB & ES, Environ. Period. Bibliogr., Excerpta Med., Geo Abstr., Oceanogr. Lit. Rev., PASCAL/CNRS, Selected Water Resour. Abstr.)

Special Issue: Future Environments for Europe: An IIASA Study of Some Implications of Alternative Development Paths

Foreword iii
Major Findings v
Acknowledgements vii

1. Introduction 1
2. Methods 3
3. Socioeconomic futures for Europe 5
4. Environmental futures for Europe 16
5. Policy dilemmas and policy exercises 50
6. Early warning monitoring systems 61
7. Some plausible environmental consequences of four alternative development paths . 68
8. Major findings and general recommendations on policies appropriate for sustaining the European environment 80
9. Recommendations for future research 86

References 94
Appendix A: List of meetings held in support of study 99
Appendix B: List of IIASA working papers and related publications within the framework of the study 99
Appendix C: Some of the principal monitoring systems in Europe 100
Appendix D: Acronyms 102

Regular Papers

Variation in cadmium content of caribou tissues from northern Québec
M. Crête, R. Nault (Saint-Cyrille, Qué., Canada), P. Walsh, J.-L. Benedetti, M.A.Lefebvre, J.-P. Weber and J. Gagnon (Sainte-Foy, Qué., Canada) 103
Effect of applications of sewage sludge on N, P, K, Ca, Mg and trace element contents of plant tissues
D. Couillard and Y. Grenier (Sainte-Foy, Qué., Canada) 113
Composition of chlorinated dibenzodioxins and dibenzofurans in various samples
V. Zitko (St. Andrews, N.B., Canada) 127
Macroalgae and phytoplankton standing crops in the central Venice Lagoon: Primary production and nutrient balance
A. Sfriso, B. Pavoni and A. Marcomini (Venice, Italy) 139
Urinary nitrite in Japanese patients with urinary tract infections
T. Mizutani, N. Akinaga (Kyoto, Japan) and H. Takatera (Osaka, Japan) 161
Trace element analysis in environmental and occupational health: Box plot representation of elemental composition results
G. Nicolaou, R. Pietra, E. Sabbioni (Ispra, Italy) and R.M. Parr (Vienna, Austria) . . 167

Cadmium and lead contents in rice available in various areas of Asia
T. Watanabe, H. Nakatsuka and M. Ikeda (Sendai, Japan) 175
An ephemeral forest drainage ditch as a source of aluminium to surface waters
B. Reynolds and S. Hughes (Bangor, Wales, U.K.) 185
Inorganic aluminium–hydrogen ion relationships for acidified streams; The role of water mixing processes
C. Neal (Wallingford, U.K.) and N. Christophersen (Oslo, Norway) 195
Predicting the long-term variations in stream and lake inorganic aluminium concentrations for acidic and acid sensitive catchments
C. Neal, T. Musgrove and P.G. Whitehead (Wallingford, U.K.) 205
Fluorine variations in Welsh streams and soil waters
C. Neal (Wallingford, U.K.) 213
The radioactivity of coloured rain in Thessaloniki, Greece
C. Papastefanou and M. Manolopoulou (Thessaloniki, Greece) 225
A longitudinal study of dentine lead levels and intelligence, school performance and behaviour: The measurement of dentine lead
J.E. Fergusson, N.G. Kinzett, D.M. Fergusson and L.J. Horwood (Christchurch, New Zealand) 229
Assimilation of thorium isotopes into terrestrial vegetation
D.R. Rayno (Raleigh, NC, U.S.A.) 243
Sources and storm loading variations of metal species in a gullypot catchment
G.M. Morrison, D.M. Revitt and J.B. Ellis (Enfield, U.K.) 267
Assessment of air pollution sources in an industrial atmosphere using principal component and multilinear regression analysis
C.A. Pio, T.V. Nunes, C.S. Borrego and J.G. Martins (Aveiro, Portugal) 279

Short Communication

Nickel-induced histopathological alterations in the gill architecture of a tropical freshwater perch, *Colisa fasciatus* (Bloch & Schn.)
K. Nath and N. Kumar (Gorakhpur, India) 293

Announcements 297
Author Index 298
Subject Index 299